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FOREWORD

BETWEEN 1880 AND 1941 the total enrolment of public secondary schools in the United States rose from about 110,000 to more than 6,700,000. This increase brought a marked extension of the range of abilities in the high-school population. Before the turn of the century practically all high schools were organized exclusively for youth whose academic interests and abilities were much above the average. Pupils who could not meet the high and often pedantic standards of these schools were either denied admission or forced to drop out after a brief trial. Gradually, in response to insistent demands for further education of all children, the bars were lowered to admit pupils of only average or below average intelligence. This was an important step forward. In a democracy every child must have the chance to obtain a well-rounded schooling.

But real equality of educational opportunity has been slow in coming. In a large number of high schools it has not yet arrived, altho considerable progress is evident. In these schools the traditional curriculum has not been sufficiently modified to meet individual needs. Many pupils still leave school with records of chronic failure and retardation, while others are promoted and graduated with little or no understanding of the subjects studied. In most instances these young people are not getting a fair chance in school because the work is not well suited to their capacities and interests.

Under the stimulus of war conditions, thousands of youth who would normally have remained in high school are dropping out to obtain paid employment. While such action may be needed to some extent in areas of acute manpower shortage, it has been unduly accelerated by the failure of many schools to provide suitable programs for slow learners and others who are not academically inclined. After the war full-time jobs in private business and industry will probably be much less plentiful than now, and public agencies will have to provide special education or work projects, or both, for large numbers of persons between the ages of sixteen and twenty-four years. The appropriate school training should be given by state and local systems, and our secondary schools must be ready to assume their share of this responsibility.

This issue of the RESEARCH BULLETIN should help in the task ahead. It reviews the characteristics and the needs of mentally backward and retarded children. It reports the provisions made for slow learners in a nationwide sample of junior and senior high schools. It gives many specific illustrations of practice in individual schools. The bulletin deserves the attention of teachers and counselors as well as school administrators, and I hope it will be widely used both in the preparation of new teachers and in programs of in-service growth.

WILLARD E. GIVENS, *Executive Secretary*
National Education Association

I. Introduction

While backwardness in school may be due to many factors, its chief cause in most instances is a relatively low degree of mental capacity, either general or specific.[1] Hence, this bulletin is concerned almost entirely with pupils who are distinctly below the average in general intelligence or in a specific aptitude, or in both. Of these two kinds of disability, low general intelligence is clearly the more serious and difficult problem for the school and will therefore receive the most attention in these pages. Pupils who have this type of disability are commonly referred to as mentally backward or retarded.

Characteristics of Mentally Backward and Retarded Pupils[2]

Intellectual capacities—In terms of intelligence test results, mentally backward and retarded children have IQ's between about 50 or 55 and 85 or 90. Children with IQ's above 90 are considered normal or superior, while those below 50 are usually ineducable in the technical sense and are practically never found in public schools. It would be absurd, of course, to say that all children above a certain point on the IQ scale need one kind of treatment while all below it need another kind. Yet many psychologists, school administrators, and teachers find it useful to distinguish not only among the intelligence levels just mentioned, but also between mentally backward or dull children on the one hand and mentally retarded or defective children on the other.

Generally the point of distinction between the retarded and the merely backward is placed at about 70 or 75 IQ. Children with IQ's between 50 and 70 or 75, altho usually educable to a limited degree, are recognized as needing special instruction in separate class groups. The dull or backward, with IQ's from 70 or 75 to 85 or 90, also need special attention but are less often placed in separate classes. The backward group is much the larger of the two. About 20 percent of American school children have IQ's of 70 thru 89, while only about 2 percent have IQ's of 50 thru 69.[3]

Pupils of low IQ tend to be deficient in attention, perception, association, memory, and reasoning. Of these defects the most severe are reasoning and memory, while the least severe are visual and auditory perception. One investigator found dull and backward pupils, as a group, to do as poorly on special tests of reasoning and long-time mechanical memory as on tests of intelligence and school attainment.[4]

The significance of these defects for the school seems reasonably clear. Attention can be improved by making the school program interesting and valuable to the slow pupil, and by convincing him that success in school is both possible and worthwhile for him. Altho his innate capacities for memory and for reasoning can probably be increased very little, their functioning in specific areas can be improved by special instruction and extra practice. The backward child should be taught to reason as best he can, and at the same time he should be helped to develop specific habits and skills which will serve him in many situations.

Mentally backward and retarded pupils usually have difficulty with the ordinary school curriculum. They are especially weak in fields which call for abstract learning, altho their achievements are likely to vary from one such field to another. The extent to which these variations are due to differences in specific aptitudes, such as mathematical or verbal capacity, is an unsettled question but there is reason to believe that such aptitudes exist and that they have some effect upon school achievement quite apart from the influence of general intelligence. As a rule, however, low intelligence is accompanied by relatively low accomplishment in reading, language, mathematics, and other subjects which depend heavily upon language and number skills. The mental activities in which dull and retarded children seem to approach children of average intelligence most closely are those involving certain perceptive

[1] Burt, Cyril. *The Backward Child*. New York: D. Appleton-Century Co., 1937. Chapter 12, p. 441-63.

[2] For further discussion of this topic, see especially: ¶ Featherstone, W. B. *Teaching the Slow Learner*. New York: Teachers College, Columbia University, 1941. Chapter 1, p. 1-10. ¶ Ingram, Christine P. *Education of the Slow-Learning Child*. Yonkers, N. Y.: World Book Co., 1935. Chapter 2, p. 10-33.

[3] Merrill, Maud A. "The Significance of IQ's on the Revised Stanford-Binet Scales." *Journal of Educational Psychology* 29: 650; December 1938.

[4] Burt, Cyril, *op. cit.*, p. 528.

and appreciative phases of music and pictorial art.

Motor abilities—On the whole, mentally backward and retarded children fall below average children of the same ages in manual and other motor skills, altho not to the degree that they do in general intelligence or academic achievement. In muscular strength and endurance, speed and accuracy of movement, and such curriculum subjects as handwriting, drawing, sewing, and handwork, careful tests have shown low-IQ pupils to be somewhat inferior as a group. Such pupils also tend to have more speech defects than their brighter schoolmates. Yet some mentally inferior individuals possess manual or mechanical abilities which equal or surpass the general average.

These facts indicate that backward children generally cannot be expected to compensate for their academic weaknesses by superior or even average performances in school tasks requiring motor skills. But since most of these children can do such tasks better than they can do intellectual work, their school programs should usually contain a larger proportion of manual and other motor activities than is provided for the brighter children. Those who have exceptional manipulative or mechanical aptitude should be given every opportunity to make the most of their special talents.

Physical characteristics—Pupils who are distinctly below the average in intelligence tend also to be somewhat below normal in desirable physical characteristics. On the average they are less well developed, have a lower level of vitality and general health, and have more sensory defects than do mentally normal children. The differences, however, are not great and there is much overlapping between the groups.

The school may well give extra attention to the bodily development and corrective physical care of dull and retarded pupils for several reasons: (1) as a group they need such attention more than do other pupils; (2) they are less likely to receive the needed attention and care outside the school; (3) the removal of physical handicaps will enable their limited mental abilities to function more effectively than before; and (4) while these youngsters are not likely to surpass mentally normal groups in physical activities, they can usually succeed better in such activities than in those which depend largely upon the higher mental processes.

Social development—A child's social maturity seems to be influenced by his physiological development and general intelligence as well as by his experience with people. The mentally slow pupil usually wants to participate in the activities of other children his own age, but is sometimes handicapped in doing so by his limited mental capacity. While his mental level is similar to that of considerably younger children, his greater physical maturity and longer experience make him dissatisfied to associate chiefly with such children. Forcing him to do so may readily lead to antisocial behavior as well as poor school progress on his part.

The school, therefore, should avoid placing mentally dull or retarded pupils with younger children for a substantial part of their school work. Some ability grouping for pupils of a given age may be needed to facilitate abstract learning, while in activities which make relatively little demand upon the higher mental processes, children of similar ages should participate together irrespective of their general brightness. In addition, the slow pupil should receive special help in learning to meet the social situations and problems of his age group.

Emotional and moral traits—Among mentally slow children there is a somewhat larger proportion with abnormal emotional and nervous conditions than is found among youngsters of average or superior ability. Such conditions, however, are not common at any ability level. A majority of slow learners react emotionally very much as other pupils do—or very much as other pupils *would* react if subjected to the same stresses and strains of daily living. In schools which attempt to maintain the same standards for everyone, the dull and retarded pupils are under much greater pressure than the average and the bright. Small wonder, then, that they more often seem worried, excitable, oversensitive, shy, apathetic, lazy, dishonest, rebellious, or even vicious. Before concluding that a particular child is temperamentally abnormal in any of these directions, school authorities should make sure that his symptoms are not due to a physical disability or to a lack of adjustment between his abilities and the demands of his school or out-of-school environment.

Identification and Appraisal of Slow Learners [5]

The best single method of identifying mentally backward and retarded pupils is to give the entire school population a dependable standardized intelligence examination. The judgments of parents are usually unreliable because of natural bias, inadequate observation, or ignorance of the actual range of mental ability among children of a given age. Teachers who know their pupils can generally make better estimates than parents, but even teachers tend to overestimate the dull child's intelligence because he is frequently older than most of his classmates. The judgments of teachers and other persons associated with the pupil are therefore best used to supplement the results of valid mental tests. The names and publishers of such tests are listed in recent books on mental measurement and in various publications dealing with individual differences or atypical children.[6]

When competently administered, a good "individual" examination is somewhat more reliable than a "group" test. However, the limitations of any test are such that no single score should be accepted as an adequate measure of mental capacity. Intelligence scores should always be supplemented by a careful appraisal of school marks, educational test scores, judgments of teachers and counselors, and other evidences of mental ability or disability.

In addition to tests of general intelligence, a great variety of instruments are available for measuring aptitude or achievement in specific fields—academic, vocational, and artistic.[7] While these tests vary widely in quality and practicability, a considerable number of them, if carefully administered and reasonably interpreted, will be found helpful in discovering specific elements of strength and of weakness in individual pupils.

In planning an appropriate program for the slow pupil, attention should be given to all factors which may impede or facilitate the child's success in school and in later life, including his physical health and sensory acuity, his emotional or temperamental traits, and his home and neighborhood environment. Every possible improvement in these factors, together with adjustments to compensate for conditions that cannot be remedied, will enable the pupil to utilize his native capacities more efficiently.

Scope and Procedure of This Study

In 1940 the Research Division undertook a study of the education of superior and slow-learning pupils in junior and senior high schools. A printed questionnaire was sent to the principals in about 5000 high schools of various types and sizes thruout the United States. Each principal was asked for his professional opinions on important questions of policy, and for specific information about the provisions for fast and slow learners in his school. He was instructed to consider a superior pupil as one distinctly above the average, and a slow-learning pupil as one distinctly below the average, in general mental ability or in a specific aptitude, or in both.

Usable replies to this inquiry were received from 1062 schools, including 308 junior high schools, 551 three- or four-year senior high schools, and 203 combined junior-senior high schools. Only the replies from schools offering a "comprehensive" program of studies in the upper grades were included in the tabulations for senior and junior-senior schools. Later the questionnaire returns were supplemented by detailed descriptions of practice in selected schools. The information thus obtained concerning the education of superior children was published in the September 1941 RESEARCH BULLETIN, and the corresponding information for slow learners is presented in the following pages.

Most of the statements in this bulletin concerning practices in individual schools represent the situation existing in 1942. Special thanks are due the principals and other faculty members who submitted the information on which these statements are based; their names are listed on page 87.

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[5] For additional information on this topic, see especially: ¶ Buros, Oscar K., editor. *The Nineteen Forty Mental Measurements Yearbook*. Highland Park, N. J.: Mental Measurements Yearbook, 1941. p. 19-465. ¶ Featherstone, W. B. *Teaching the Slow Learner*. New York: Teachers College, Columbia University, 1941. Chapter 2, p. 11-21. ¶ Ingram, Christine P. *Education of the Slow-Learning Child*. Yonkers, N. Y.: World Book Co., 1935. Chapter 7, p. 105-37.

[6] For a brief list of intelligence tests suitable for use in high schools, see: National Education Association, Research Division. "High-School Methods with Superior Students." *Research Bulletin* 19: 159; September 1941.

[7] See especially: Buros, Oscar K., editor, *op. cit.*, p. 19-197, 268-465.

II. School Provisions for Slow Learners: Organization and Administration

This section of the bulletin deals with those aspects of the school program for slow learners which are primarily organizational or administrative in character. First, it reviews the opinions of high-school principals on a number of important issues as indicated by their responses to the questionnaire. Next is a general overview of local school practices in handling slow learners, including a summary of the questionnaire replies concerning such practices together with terse descriptions of programs in individual schools from the administrative point of view. Finally, the section describes in a little more detail certain specific aspects of administrative practice in selected schools.

Opinions of High-School Principals

In one part of the questionnaire a list of twelve brief statements was presented, each expressing a point of view or belief in regard to desirable school provisions for slow-learning pupils. The responding principal was requested to consider each statement in the light of its significance for slow learners at the school level represented by his school, ignoring the question of administrative feasibility. He was then asked to indicate by "Yes" or "No" whether he thought the statement represented a *desirable general policy*. The reactions of principals in three types of high schools are summarized in Table 1.

TABLE 1.—POINTS OF VIEW OF THE COOPERATING PRINCIPALS IN THREE TYPES OF HIGH SCHOOLS WITH RESPECT TO DESIRABLE GENERAL POLICIES IN THE EDUCATION OF SLOW-LEARNING PUPILS

Points of view	Percent of principals in		
	Junior high schools[a]	Comprehensive senior high schools[b]	Combined junior-senior high schools[c]
1	2	3	4
A. *All principals (100 percent) believe:*			
1. That the school provisions for slow-learning pupils should differ in some respects from those for pupils of average ability	100	100	100
B. *A large majority (75 percent or more) believe:*			
2. That slow-learning pupils, whether placed in separate classes or in regular classes with average pupils, should be given less class work or less difficult class work than the average pupil	97	94	93
3. That slow-learning pupils should be given individual coaching or remedial work in special periods	93	88	92
4. That pupils of low general ability should be given a special curriculum including some academic subjects but emphasizing practical or vocational activities	90	86	94
C. *A smaller majority (between 50 and 75 percent) believe:*			
5. That pupils of low general ability should carry fewer courses at a time than the average pupil	65	68	72
6. That separate classes should be organized for slow-learning pupils	74	62	63
7. That slow-learning pupils should have teachers whose qualifications differ in some respects from those considered adequate for teachers of average pupils	73	60	59
8. That pupils of low general ability should take more time to complete the school curriculum than the average pupil	53	61	63
9. That pupils of low general ability should have less freedom in choosing courses than the average pupil	53	50	52
D. *A large minority (between 25 and 50 percent) believe:*			
10. That pupils of low general ability should attend a vocational high school rather than an academic or comprehensive high school (a small majority in junior high schools)	59	41	48
11. That pupils of low general ability should participate less in extracurriculum activities than the average pupil (a smaller minority in junior high schools)	23	36	40
12. That slow-learning pupils who fail to show satisfactory accomplishment in a particular subject should repeat the work in that subject (a smaller minority in junior high schools)	23	33	32

[a] The percents given in this column are based on numbers of cases ranging from 262 to 307.
[b] The percents given in this column are based on numbers of cases ranging from 490 to 551.
[c] The percents given in this column are based on numbers of cases ranging from 181 to 203.

The 1061 principals who expressed opinions are unanimous in believing that school provisions for slow-learning pupils should differ in some essential respects from the provisions for average pupils. While there is not complete agreement on any specific question of policy, a very large proportion of the respondents subscribe to the following beliefs: (1) that slow-learning pupils, whether placed in separate classes or in regular classes with average pupils, should be given less class work or less difficult class work than the average pupil; (2) that slow learners should be given individual coaching or remedial work in special periods; and (3) that pupils of low general ability should be given a special curriculum including some academic subjects but emphasizing practical or vocational activities. Thus the old idea that all high-school pupils should stand or fall according to their ability to master the typical academic curriculum seems to have been replaced, in the minds of most principals, by a concept of education adapted to individual capacities and needs.

A somewhat smaller majority of the responding principals think that pupils of low general ability should carry fewer courses at a time than the average pupil; that slow learners who fail to show satisfactory accomplishment in a particular subject should *not* usually repeat the work in that subject; that separate classes should be organized for pupils of low ability; and that such pupils should participate in extracurriculum activities no less than the average pupil. A more even division of opinion is evident as to whether pupils of low general ability should attend a vocational high school rather than an academic or comprehensive high school; whether such pupils should have less freedom in choosing courses and take more time to complete the school curriculum than the average pupil; and (in senior and junior-senior high schools) whether the teachers of such pupils need special qualifications.

Of considerable significance is the fact that more of the principals favor the following provisions for slow or mentally backward pupils than favor the same provisions for superior or rapid learners:[1] separate classes, special curriculums, adjustments in the number of courses or subjects carried at one time, variations in the time required for completion of the school curriculum, and the assignment of teachers with special qualifications.

Influence of school type and school size—Table 1 shows a fairly high degree of consistency in the opinions of principals from the three types of schools represented. Figures not reported in this table indicate that *size* of school also bears little relation to the opinions of principals on most of the points raised in the questionnaire. But in the senior high schools enrolling 1000 or more pupils, a substantially larger proportion than in the smaller schools approve separate classes for slow learners and think that such classes should have teachers with special qualifications. At the same time, fewer of the principals in the largest schools believe that the number of courses carried by pupils of low general ability should be reduced below that for average pupils, or that the youngsters with low IQ's should attend a vocational school rather than a comprehensive high school. These differences perhaps reflect to some extent the relative practicability of certain types of provisions in large and small schools. The larger schools are better able to arrange for separate classes, special curriculums, and the assignment of specially-prepared teachers, and consequently the principals of such schools tend to see less need for reducing the number of courses carried by slow learners or for placing them in special vocational schools.

Comments of individual principals—Several points of view expressed at some length by individual principals are worth consideration. While many extolled the advantages of ability grouping or special classes for slow learners, a number expressed dissatisfaction with the results of such grouping or pointed out specific dangers to be avoided. One senior high-school principal stated that in his opinion special classes cause the teachers to feel less responsible for the individualized treatment of pupils and so to place too much emphasis on subjectmatter. He indicated that if classes could be kept at about twenty-five pupils each, he would favor no segregation whatever.

A second principal expressed the belief that the segregation of slow learners, as practiced in his school, tends to concentrate discipline problems in the very groups where examples

[1] For the opinions of principals concerning provisions for superior pupils, see: National Education Association, Research Division. "High-School Methods with Superior Students." *Research Bulletin* 19: 163-64; September 1941.

of good conduct are most needed, and that it unduly handicaps the slow but earnest, conscientious pupil. This is especially likely to occur, he said, if pupils of low general ability are grouped with those whose slowness in learning is due to some other handicap, such as defective hearing, poor reading habits, or inadequate social and emotional adjustment. Another respondent agreed that placing a group of problem children together in one room is likely to be disastrous *unless* the teacher in charge is specially qualified to handle such a group.

The principal of a senior high school offered the opinion that interests, rather than mental ability, are the chief characteristics which differentiate children for school purposes, and that classes should therefore be organized primarily on the basis of pupil interests, with any necessary adaptation to differing abilities within each class. A somewhat different view was expressed by the head of a four-year high school, who contended that slow learners need a well-rounded education no less than do other children. He declared:

> A feeling on the part of students that they are not interested in language or mathematics or any special field is not a sufficient justification, even combined with lack of capacity in those fields, for not including the fields in their high-school course of study. We should set up offerings in every field in such a way that they will be interesting and valuable to these people. . . . It seems to me quite a mistake, for example, not to include training in music and art in the curricula of all students simply because some of them show no special interest or capacity in these fields. I am convinced that over a long period of years the value and satisfaction to be derived from a broad and rich education will become more and more evident. I believe we have a grave responsibility for giving such an education and for insisting that no pupil be allowed to narrow his educational experiences because of a supposed lack of interest or mental capacity.

While many readers may consider this statement too extreme, its warning against narrowness and softness in the school program seems justified. Undoubtedly there are some areas of subjectmatter which pupils of very limited ability should not attempt to master, but experiences designed to attain all the major purposes of education must be provided for pupils of every kind and degree of ability.

In accord with this idea, the principal of a six-year high school registered his conviction that slow pupils should complete a general high-school course, if possible, before undertaking anything else. Such a plan presumably would not keep high-school pupils from having prevocational experiences of a highly practical nature, but it would mean postponing the development of specialized vocational skills for most slow learners until the junior-college years.

Overview of Local School Practices

This overview of school provisions is divided into two parts: (1) a summary of the replies to pertinent items in the questionnaire, and (2) brief, over-all descriptions of practice in a few selected schools.

Summary of Questionnaire Replies

After expressing their opinions as to desirable general policies in the education of slow-learning pupils, the responding high-school principals were asked whether the provisions ordinarily made for such pupils in their schools are different in any respect from the provisions ordinarily made for pupils of average ability. Those answering in the affirmative were directed to check, in a list of eleven general types of provisions, each type which is ordinarily made for slow learners in their respective schools. The responses thus obtained are summarized in Table 2.

An examination of the individual questionnaire replies suggests that Table 2 may exaggerate somewhat the proportions of schools making certain types of provisions for slow pupils as a matter of *general policy*. Some principals probably checked certain items which apply in their schools only to one or two subject fields or to pupils of extremely low mental ability, or to pupils with unusually difficult personality problems. For this reason the figures should be interpreted as upper limits rather than as the true percents for these schools. In spite of this limitation, a large difference between the percents for any two items in the list probably indicates a real difference in the frequency with which the methods in question are used by the reporting schools.

While more than nine-tenths of the schools reported that the provisions which they ordinarily make for slow pupils differ in *some* way from those for average pupils, the number making any one of the eleven specific provisions listed in Table 2 is considerably smaller. Only

three specific items were checked by more than half of the junior high-school principals, and only four were checked by more than half of the principals in senior high schools and in junior-senior high schools. Heading the list in both the separate junior and the separate senior high schools is the provision of individual coaching or remedial work in special periods. The organization of separate classes apart from average pupils is a close second in the junior high schools, but was reported less frequently by the principals in other types of schools. The next most frequent practice, generally speaking, is the variation from achievement standards required of average pupils in the same classes.

Among the less common provisions, especially in the junior high schools, are variation from the average amount of participation in extracurriculum activities and variation of the length of time required by the average pupil to complete the school curriculum. There seems to be no general tendency for the schools to restrict the opportunities of slow pupils more than the average, either in extracurriculum activities or in the number and type of courses to be pursued. There is likewise no general movement to lengthen the period of high-school attendance for these pupils or to give them special curriculums extending thru several school years.

For most of these provisions, the percent of principals favoring a given provision (Table 1) is considerably larger than the percent of schools actually having that provision in effect (Table 2). The greatest discrepancy of this kind occurs with respect to the question of a special curriculum for slow learners; nearly nine out of ten principals favor such a curriculum but fewer than one-third of their schools have such curriculums in operation. On the other hand, a good many schools are still requiring slow-learning pupils to repeat subjects in which their achievement is deemed unsatis-

TABLE 2.—GENERAL PROVISIONS MADE FOR SLOW-LEARNING PUPILS IN THREE TYPES OF COOPERATING HIGH SCHOOLS

Provisions made	Percent of 302 junior high schools	Percent of 524 comprehensive senior high schools	Percent of 192 combined junior-senior high schools
1	2	3	4
A. *A large majority of schools (75 percent or more) report:*			
1. That the provisions which they ordinarily make for slow-learning pupils differ in some respect from those made for pupils of average ability	95[a]	90[b]	96[c]
B. *A smaller majority (between 50 and 75 percent) report that they ordinarily make the following provisions:*			
2. Individual coaching or remedial work in special periods	72	62	64
3. Variation from the standards of achievement required of average pupils in the same classes	63	57	67
4. Individualized instruction and guidance within classes containing average pupils—no definite grouping (a large minority in junior high schools)	41	55	56
5. Repetition of a subject if achievement in that subject is unsatisfactory (a large minority in junior high schools)	39	53	55
6. Separate classes apart from average pupils (a large minority in combined junior-senior high schools)	68	50	48
C. *A large minority (between 25 and 50 percent) report that they ordinarily make the following provisions:*			
7. Separate learning groups within classes containing average pupils	32	31	40
8. Variation from the number of courses carried at a time by the average pupil	25	37	41
9. Special curriculum involving a variety of school subjects and extending thru several school years—not for average pupils	32	27	31
10. Variation from the amount of freedom allowed the average pupil in choosing courses	25	26	30
11. Variation from the length of time required by the average pupil to complete the school curriculum (a smaller minority in junior high schools)	19	32	36
12. Variation from the average amount or kind of participation in extracurriculum activities (a smaller minority in junior high schools)	15	26	34

[a] This percent is based on replies from 308 schools.
[b] This percent is based on replies from 545 schools.
[c] This percent is based on replies from 202 schools.

factory, altho such a requirement is approved by fewer principals than any other practice in the list.

Effect of school size—A tabulation of the responses from senior high schools of different sizes (not shown in Table 2) reveals that somewhat more of the larger schools than of the smaller ones reported provisions for slow learners which differ from those for average pupils. For example, special curriculums were reported by 11 percent of the senior high schools with enrolments below 200, by 24 percent of those with enrolments of 200 to 499, and by 32 percent of those enrolling 1000 or more pupils. Even more striking are the frequencies for separate classes, which range from 7 percent of the schools below 200 in enrolment to 74 percent of the schools enrolling 1000 or more. Conversely, only 48 percent of the largest schools reported providing individualized teaching and guidance for slow learners within classes containing average pupils, while 66 percent of the smallest schools reported such a provision.

Practices in Selected Schools

The following paragraphs present several illustrations of provisions for slow learners in individual schools. These illustrations differ from those found in later sections of the bulletin in that each one gives a broad overview of the provisions in a particular school, rather than laying special emphasis on one aspect of the program.

School No. 1—In the six-year high school at Amherst, Massachusetts (a medium-sized school) grade placement is based on age and physical and social maturity rather than on accomplishment. Within each grade the pupils are grouped according to a combination of mental and emotional factors. The slow-learning groups consist chiefly of pupils with IQ's between 65 and 85, but include a few of higher mentality who are emotionally dull—so lacking in ambition or physical energy that they cannot keep pace with typical children of their own mental levels.

These backward pupils are given a special curriculum, which usually includes six years of English, social studies, science, and physical education, together with shorter periods of work as needed in art, practical arts, industrial arts, home economics, general business, and music. The teachers have a great deal of freedom to modify the program in any field according to the abilities and needs of each individual. Wherever these slow learners can readily hold their own with the other pupils—as in homerooms, physical education classes, assemblies, sports, and other school activities—they are mingled indiscriminately with the rest of the school population.

The assignment of teachers to these groups differs from the practice followed in many schools. In Grades VII and VIII the pupils of each slow group spend most of their time with one teacher, but in the later grades they meet as many different teachers as do the other pupils. This arrangement helps to give the teachers of older groups a fresher and more energetic approach, and gives their pupils a desirable variety of experience and stimulation. Moreover, the school has found that pupils who for emotional reasons are not working up to capacity can sometimes be aroused and given a new start by one particular person, even tho all others have failed. Having such a pupil meet five or six teachers each day increases the likelihood of this happening to him.

A follow-up study of the pupils in these groups over a period of several years showed the following results:

1. Enabled to cope with regular courses	17%
2. Successfully transferred to trade school	11%
3. Kept in regular high school, apparently with benefit, until a suitable opportunity to leave prior to finishing Grade XII	25%
4. Kept in school thru Grade XII and given a certificate	30%
5. Benefited little or none, as far as the school staff could see	17%
Total	100%

School No. 2—The Mound Junior High School of Columbus, Ohio, is a downtown school of about 1000 pupils in Grades VII, VIII, and IX. To provide for the extremely wide ranges of general intelligence and of social and economic status among the pupils, the following administrative arrangements are made: (1) grouping according to ability and special interests with curriculum adjustments to meet the needs of each group, (2) "trade schedules," (3) a special, ungraded room for boys, and (4) an extensive activity program.

The general plan of grouping according to abilities and interests applies chiefly to the academic subjects, such as English, mathe-

matics, science, and history. For example, there may be as many as six sections of VII-A English, each one organized to represent a different general level of proficiency in reading and other language activities. To serve these groups adequately, the teachers of each subject field have worked out minimum requirements together with enrichment programs suitable for each successive level of ability. Frequently the lowest group of a given grade uses entirely different textbooks, plans, and procedures from those used by higher sections. The teachers are selected and assigned according to their ability to succeed with particular types of pupils.

The "trade schedule" procedure is a modification of the regular school program whereby mentally backward pupils are permitted to schedule those subjects in which they have the best chance of succeeding and which will give them the best preparation for early withdrawal from school. Under this plan a pupil may pursue any subject in which he shows special interest and ability—such as shop work or physical education—for several periods each day, together with a minimum of academic work according to his individual needs. Schedule adjustments of this kind improve the attitudes of many pupils and encourage them to remain in school longer than they otherwise would. However, while no pupil is denied the opportunity to make up his academic deficiencies and complete the regular schedule of courses, graduation as usually defined is the exception rather than the rule among pupils who have been given trade schedules.

A number of boys who cannot be expected to benefit from the arrangements already mentioned are placed in the special ungraded room. Some of these boys have been drawn directly from special classes in the surrounding elementary schools, while others have been included because of their poor adjustment after reaching junior high school. The personnel of this room, which usually numbers about thirty, is not limited to pupils of low mentality but includes also those having physical handicaps, language handicaps, or personality problems that interfere with their progress under the regular school routine. Each pupil does individual work and may progress at his own rate. Part of the day is spent in academic learning, and the remainder is devoted to shop work, art, music, dramatics, physical education, typewriting, and any other activity for which the pupil shows particular aptitude. The room is especially equipped for manual activities, including general repair work, refinishing furniture, mending chairs, shining shoes, repairing shoes, and making toys. Occasionally a boy in this room overcomes his handicaps and is assigned to the regular curriculum.

The program of pupil activities includes an organization for pupil government and a variety of clubs. The pupil government organization is patterned after the city government of Columbus. There are several service clubs in which about one-fourth of the pupils participate, and a group of interest clubs whose membership includes more than 80 percent of the pupils. Thru these activities the slow youngster as well as the bright and the average is given a chance to find and develop his special interests and abilities.

In addition to these provisions within the junior high school itself, the school system operates two opportunity schools, one for boys and the other for girls. The opportunity schools accept from the elementary schools a limited number of pupils who, because of extremely low intelligence, poor scholarship, or serious personality difficulties, cannot benefit significantly from the junior high-school offerings. Each semester about fifteen such pupils are sent to these two schools instead of to the Mound Junior High School.

School No. 3—The Northern High School of Detroit, Michigan, is a three-year senior high school of comprehensive character. The pupil population of 3000 is divided alphabetically among eight "houses," each in the charge of a trained counselor who has no teaching and no clerical work to do. Each house contains pupils from the tenth, eleventh, and twelfth grades. There is no general plan of ability grouping, but each course of study is outlined in two ways, one for average pupils and the other for slow pupils with IQ's above 82, approximately. Exceptionally bright pupils are given extra work, usually of their own choice.

Recently the school undertook to care for a limited number of the most promising youngsters from Grade IX-A who have IQ's *below* 82 and who, before reaching the senior high school, have been segregated in rooms with specially-trained teachers. At first these pupils were distributed among the eight houses and scheduled for regular classes just like other children. After a thoro interview, each pupil

was given a class in English and one in arithmetic, as well as two subjects in which he might develop a special interest. Experience soon showed, however, that very few of the group could meet the regular minimum requirements in English and mathematics. Consequently, a special core course in English and mathematics was developed and is taught to this group alone during the first ninety minutes of each day by a special teacher. For the rest of the day the pupils are assigned to regular classes with regular teachers, chiefly in the fine arts, home economics, and vocational subjects. These teachers give particular attention to members of the special group and often consult with the special teacher about them. Most members leave school by the end of Grade XI, but a few usually remain to finish the senior year.

The core curriculum for this slow group is continually modified to meet the changing interests of the pupils. The work in other fields is extremely varied. One girl of eighteen, whose father ran a beer garden, was taught quantity cooking and serving in connection with the school lunchroom, and was also given a very elementary course in bookkeeping. After two and one-half years of such training she became her father's assistant, much to their mutual satisfaction. Another young woman of unusual taste and skill in designing clothes was given special work in art and sewing classes. Before leaving school she won a prize for achievement in her chosen field, and later she became a designer and remodeler for one of the city's dress shops. A boy who had considerable aptitude for drawing was given all the mechanical drawing he could absorb and as much mathematics as was necessary. He obtained a position as a tracer.

A most important factor in the success of this program is the special teacher. She is primarily an art teacher, but has a comprehensive knowledge of all courses offered in the high school and has taken special graduate work dealing with the curriculum for retarded children. She studies carefully the complete school record of each child, including his performances on mental and educational tests, assists in making out his program of work, and helps in the adjustment of any other problems. She makes at least one call on each home every year.

School No. 4—The Bay Ridge High School in Brooklyn, New York, has a "manual arts" curriculum for nonacademic girls, including those with low IQ's, those who are slow but not dull, and those with special abilities or interests. The focal point of this curriculum is the study of home economics. Related instruction is provided in English, art, music, American history, household science, child care, economics, and mathematics. Typewriting and office practice are added to meet the need for simple business skills among all types of workers.

Pupils who seem likely to benefit most from such a program are admitted to it after completing their first year in high school, that is, at the beginning of Grade X. The selection is based on IQ, reading ability, recommendation of the VIII-B teacher, achievement in Grade IX, and any other pertinent factors. Pupils following this curriculum do much of their work in separate classes but are not segregated otherwise. Those who complete the program receive certificates rather than diplomas, but the girls are not told at the beginning that they are nondiploma pupils, because usually a few prove capable of transferring to the regular program and do receive diplomas.

As a rule, no pupil repeats any course in this curriculum; 100-percent promotion is the general policy. Few, if any, study periods are programmed. Teachers are selected with great care, and course assignments are rotated among those qualified. The teachers of various subjects confer frequently in regard to common problems and methods of correlating their work, and copies of the courses of study in all subjects are placed in the hands of each teacher. A special adviser is assigned to the general supervision of all pupils in the manual arts curriculum.

Specific Aspects of Organization and Administration

This subsection contains additional information from the questionnaire responses, together with appropriate illustrations from individual schools. Each illustration is concerned with only one or two types of provisions rather than with an entire school program. Mention of a particular provision does not mean that the school under consideration makes little or no other provision for slow learners.

Ability Grouping and Special Classes

Each high-school principal cooperating in this study was asked to state the number of separate classes which his school maintains for slow-learning pupils in each major subject field. Table 3 shows the percents of the cooperating schools which reported *one or more* such classes in individual fields. Probably the classes included range in type from those operating as part of a two- or three-level system of ability grouping to those "special" classes organized for mentally retarded or defective children.

As indicated in Table 3, English heads the list of subjects in regard to the percent of schools reporting one or more separate classes for slow learners, with mathematics, social studies, and science following in that order. This is true for each type of school represented. However, only in the first three subjects were such classes reported by as many as half the junior high schools, and only in English were they reported by that proportion of senior and junior-senior high schools. In most subjects separate classes were reported more frequently by the junior and junior-senior high schools than by the three- or four-year senior high schools.

Table 3 confirms the data given in connection with Table 2, showing a much greater tendency toward the operation of separate classes in the large senior high schools than in the small ones. The percent reporting such classes in English ranges from 13 in the schools enrolling fewer than 200 pupils to 78 in those enrolling 1000 or more pupils. In mathematics the corresponding range is from 7 to 55 percent.

A plan of partial segregation—In the Tilden Junior High School of Philadelphia, slow pupils are placed in separate classes for instruction in the academic subjects (English, mathematics, science, and social studies), but are assigned to heterogeneous classes in art, music, physical education, cooking, sewing, mechanical drawing, and shop work. This plan combines the advantages of a limited range of pupil ability in the intellectually more difficult subjects, with the social and emotional advantages of having pupils mingle freely with others of widely varying mentalities in fields where abstract intelligence is of less importance.

Grouping based on achievement and age—In the Leonard Junior High School of New Rochelle, New York, the pupils in each grade are grouped on two bases, scholastic achievement and chronological age. By means of a battery of standardized achievement tests the pupils of each grade are placed in divisions of about seventy pupils each. These divisions represent four different levels of achievement: superior, average, moderately below average, and extremely backward. Each division is subdivided into two groups of thirty-five pupils each, one group containing the younger pupils and the other group the older pupils of the division. The various courses of study for each grade are organized on a four-track plan with one track for the pupils of each achievement level, regardless of age.

A flexible plan utilizing a variety of information—The Bancroft Junior High School of Wilmington, Delaware, has ability group-

TABLE 3.—PERCENTS OF COOPERATING HIGH SCHOOLS HAVING ONE OR MORE SEPARATE CLASSES FOR SLOW-LEARNING PUPILS IN INDIVIDUAL SUBJECT FIELDS

Subject fields	Percent of			Percent of senior high schools with enrolments of			
	256 junior high schools	508 comprehensive senior high schools	187 combined junior-senior high schools	Below 200 (56 schools)	200-499 (115 schools)	500-999 (124 schools)	1000 and over (208 schools)
1	2	3	4	5	6	7	8
English	70	56	56	13	32	59	78
Mathematics	63	39	46	7	23	41	55
Social studies	56	31	38	5	13	27	49
Science	41	28	33	5	13	31	40
Industrial arts	26	10	18	4	4	13	12
Commercial subjects	11	17	13	4	4	13	27
Foreign language	9	12	8	0	0	13	22
Household arts	24	9	14	2	4	11	11
Music	14	3	10	0	1	4	4
Art	14	3	7	0	1	3	4
Physical education	11	3	6	0	0	3	6

ing thruout its six half-grades. From each entering seventh-grade class a preliminary selection of pupils for each group is made using IQ's, achievement test scores, and teachers' marks from the elementary schools. This tentative grouping is submitted to the sixth-grade teachers of these pupils to obtain their criticisms and suggestions before a final decision is reached. An effort is made to keep each low group to twenty or twenty-five pupils. After each marking period desirable adjustments are made in the personnel of these groups by the principal and teachers in conference. In addition a class teacher may recommend a change at any time for a pupil in one of her groups, and her recommendation is sent at once to all the other teachers of that pupil for their comments or suggestions. Final disposition of such cases is made by the group sponsor and the principal.

Accelerated classes—While accelerated classes for superior pupils have been operating in a number of schools for many years, it is unusual to find such classes for slow children. The latter plan is in effect at the Hollenbeck Junior High School in Los Angeles, California, where the over-age problem has been serious for many years. Forty-eight percent of the children are Mexican, and about 12 percent are retarded scholastically by two or more years. The median IQ is 92, with 6 percent of the pupils below 70 IQ.

After other attempts at adjustment had failed, accelerated classes were established to help retarded pupils catch up with others nearer their own age and size. There is now in Grade VII-B (first semester) a so-called conditioning class for acceleration composed of pupils two or more years retarded and with IQ's of 75 to 90. (Those below 75 are placed in special language-skills classes.) The pupils of the conditioning class are assigned to sympathetic, understanding teachers in social living and in mathematics, who watch them closely and hold before them the possibility of entering an accelerated class in Grade VII-A so that they may graduate in two and one-half years instead of three. If recommended for acceleration, pupils are placed in a mathematics course corresponding to the work of Grades VII-A and VIII-B, under the same teacher as in VII-B mathematics. If they succeed in this course and carry other VII-A work acceptably, they are allowed to take, during the VIII-B term, an VIII-A course in science and a social-living course representing Grades VIII-B and VIII-A. Upon successful completion of the VIII-B term they are ready to begin IX-B work, and on finishing the latter they are promoted to a IX-A homeroom if all marks are satisfactory.

All candidates for these accelerated classes must be recommended by their homeroom and subject teachers as well as by the attendance office. Unsatisfactory marks are thoroly investigated, and citizenship must be above reproach. At the end of each quarter any slackers are taken out.

Under this system attendance and discipline problems have decreased greatly, and the retarded pupils have become happier, better adjusted, and more successful members of the school. Moreover, their improved attitudes seem to continue as they pass on into senior high school.

Unusual plan of homeroom grouping—A marked variation from the typical plan of ability grouping is found in the organization of homerooms at the Nathan Hale Junior High School of New Britain, Connecticut. The entering seventh-grade class of, say, 300 pupils is divided into ten homeroom groups of thirty pupils each. In making this division the pupils' names are first arranged in order of their IQ's. Then, beginning with the lowest IQ, a homeroom group is formed with a range of not more than thirty IQ points and a membership distributed as evenly as possible along the scale between the highest and lowest IQ's. The next group, instead of beginning at the upper limit of the first group, begins perhaps five IQ points above the *lower* limit of the first group and extends five points beyond the *upper* limit of the first group. Subsequent groups are formed in similar fashion, so that each one greatly overlaps the preceding one, as follows:

Group	*IQ limits*	*Group*	*IQ limits*
A	65- 95	F	90-120
B	70-100	G	95-125
C	75-105	H	100-130
D	80-110	I	105-135
E	85-115	J	110-140

This plan, according to the school principal, provides a desirable range of abilities within each homeroom group and avoids the disadvantages which may accompany the formation of sharply differentiated groups, including the stigma sometimes attached to the typical "low"

group. Under this arrangement there are several low groups, each one a little different but having much in common with the others.

Teaching Personnel

As shown in Table 1, 73 percent of the responding junior high-school principals, 60 percent of the senior high-school principals, and 59 percent of the principals in junior-senior high schools believe that slow learners should have teachers whose qualifications differ from those considered adequate for teachers of average pupils. These percents, however, are based on the total numbers of responding principals, at least half of whom have no separate classes for slow pupils in their schools. As to the practice in schools having separate classes or special curriculums for such pupils, Table 4 presents some significant figures.

In nearly nine out of ten junior high schools and about three-fourths of the other schools represented in Table 4, teachers of slow-learning pupils ordinarily are selected because their qualifications are better suited to such work than are those of the regular class teachers. Of the ten specific bases of selection, however, only three were reported by more than half of the junior high schools, and only one of these is used by more than half of the senior and junior-senior high schools. About two-thirds of the schools of each type select teachers who have a better understanding of the problems of individual pupils than is needed by teachers of average groups. Next in order of frequency for both junior and senior high schools are special training for work with slow learners and the teacher's expressed preference for this kind of work. Only a small proportion of the schools require a longer-than-average total teaching experience, a higher general intelligence than is needed by teachers of average pupils, or a broader cultural and academic background. Likewise, only a few schools fol-

TABLE 4.—BASES USED IN SELECTING TEACHERS FOR SLOW-LEARNING PUPILS IN HIGH SCHOOLS HAVING SEPARATE CLASSES OR CURRICULUMS FOR SUCH PUPILS

Bases of selection	Percent of 201 junior high schools	Percent of 267 comprehensive senior high schools	Percent of 111 combined junior-senior high schools
1	2	3	4
A. *In a large majority of schools (75 percent or more):*			
1. Teachers of slow-learning pupils are ordinarily selected because their qualifications are better suited to such work than are those of the regular class teachers (a smaller majority of senior high schools)	87	74	77
B. *In a smaller majority of schools (between 50 and 75 percent) the following bases of selection are used:*			
2. Better understanding of the problems of individual pupils than is needed by teachers of average pupils	67	67	64
3. Special training for work with slow learners (a large minority of senior high schools)	55	47	50
C. *In a large minority of schools (between 25 and 50 percent) the following bases of selection are used:*			
4. Expressed preference of the teacher for work with slow learners[a]	52	44	38
5. Greater competence in teaching a particular subject than is needed by teachers of average pupils	32	40	42
D. *In a smaller minority of schools (fewer than 25 percent) the following bases of selection are used:*			
6. Lighter teaching load than that of the average teacher in the school at time of selection[a] (a larger minority of junior high schools)	33	22	23
7. Longer total teaching experience than that of the average teacher in the school	18	13	24
8. Higher general intelligence than is needed by teachers of average pupils	12	19	14
9. Broader cultural and academic background than is needed by teachers of average pupils	8	12	13
10. Policy of rotating responsibility for teaching slow-learning pupils among all teachers of a given subject[a]	13	11	6
11. Policy of assigning slow-learning pupils to the teachers of a given subject who have taught longest in the school[a]	1	3	3

[a] There is reason to believe that the true percents for this item are somewhat larger than those reported here.

low the policy of rotating responsibility for slow classes among all teachers of a given subject, or of assigning such classes to the teachers who have taught longest in the local school.

Data on the frequency of these practices in senior high schools of different sizes (not shown in the table) indicate a greater tendency among the larger schools than among the smaller ones to select teachers with special qualifications for slow-learning groups.

Information Used in Guiding Pupils

Another section of the questionnaire to high-school principals asked what kind of information about slow learners is usually given careful consideration in their schools as a means of helping in the adjustment of such pupils. The results, shown in Table 5, indicate that most of the kinds of information listed are used by a significant, if not always large, proportion of the cooperating schools. Heading the list in both the junior and the junior-senior high schools, and running a close second in the senior high schools, are the scores from group intelligence tests. High-school teachers' marks, which rank first and second, respectively, in the senior and junior-senior high schools, are used much less often in the junior high schools. On the other hand, several types of information from elementary schools—standardized achievement test results, teachers' estimates of general intelligence, teachers' marks, and teachers' estimates of aptitudes in specific fields—are naturally used much more widely in junior high than in senior high schools. Other items reported more frequently by the junior high schools than by the senior high schools are intelligence scores on both group and individual tests; information on physical health, home environment, personality adjustment, social maturity, and physical maturity; and information as to the attitudes of parents toward the proposed methods of adjustment. Several of these types of information are used, however, by fewer than half of the schools in any group.

A school plan for using information about pupils—In the six-year high school at Shorewood, Wisconsin, all the teachers of a given grade meet once every two weeks with the school psychologist and deans to discuss the problems of individual pupils. More than any other one practice, says the principal, these conferences have developed in the staff a concern for the growth of each child, an understanding of the extent of individual differences, and an appreciation of the requirements for meeting such differences. In addition, the counselors try to have at least one conference per year with every pupil and his parents, and a summary of the outcomes of each conference is circulated among the teachers of the pupil concerned.

TABLE 5.—KINDS OF INFORMATION WHICH RECEIVE CAREFUL CONSIDERATION IN MEETING THE INDIVIDUAL NEEDS OF SLOW-LEARNING PUPILS IN THREE TYPES OF HIGH SCHOOLS

Kinds of information considered	Percent of		
	298 junior high schools	501 comprehensive senior high schools	178 combined junior-senior high schools
1	2	3	4
1. Group intelligence test results	79	70	79
2. High-school teachers' marks or estimates of school achievement	46	71	72
3. High-school teachers' estimates of general intelligence	43	57	63
4. Standardized achievement test results in elementary-school subjects	76	43	59
5. Elementary-school teachers' estimates of general intelligence	69	45	57
6. Elementary-school teachers' marks or estimates of school achievement	72	43	55
7. Information on physical health	58	48	56
8. Individual intelligence test results	64	43	52
9. Information on home environment	52	38	52
10. High-school teachers' estimates of aptitudes in specific fields	32	49	50
11. Standardized achievement test results in high-school subjects	36	44	51
12. Information on personality adjustment	44	36	37
13. Standardized aptitude test results in specific fields	33	37	41
14. Elementary-school teachers' estimates of aptitudes in specific fields	43	28	34
15. Information on social maturity	37	23	33
16. Information on parental attitudes toward special provisions for slow learners	27	22	29
17. Information on physical maturity	32	18	24

Modified Marking Systems

The wise assignment of school marks, while important for all pupils, has particular significance for those who are below average in scholastic ability.

A comprehensive plan—The Roosevelt Junior High School at Syracuse, New York, gives credit for achievement in relation to individual ability and at the same time appraises each pupil's accomplishments with reference to those of his fellows. An important feature of this plan is the determination of a so-called "normal average" for each pupil on the basis of his performance on the *Otis Classification Test,* which purports to measure both general intelligence and school achievement. The "normal average" is the average mark (expressed as a percent) which the pupil may be expected to attain with reasonable effort in the junior high school, judging from the actual marks attained by other children in the school who have made similar scores on the Otis test. At the end of each report period the homeroom teacher averages the class marks for each pupil, compares this average with the "normal average," and assigns the pupil a letter mark for effort. If the average of a pupil's class marks is at least four percentage points above his "normal average," his effort mark is an "A." If his class-mark average equals his "normal average" or exceeds it by less than four points, he gets a "B" for effort. An average mark which is one to four points *below* his "normal average" entitles him to a "C," while a still lower average gives him a "D." The effort letter is reported separately and is also averaged with letter marks for behavior, health habits, extracurriculum activities, and attendance in determining the pupil's general rating for the period. Since his class marks in all subjects are likewise reported separately, he can readily compare his actual achievements with those of other pupils in his group.

Special mark for slow learners who fail—A simpler procedure, intended merely to protect hard-working slow learners against the stigma of undeserved failure, is the use of a special passing mark for such pupils in the senior high school at Mt. Lebanon, Pittsburgh, Pennsylvania. Here a mark of "X" is used for prospective failures whenever the teacher's judgment and other evidence indicate that the pupil in question has met all performance requirements of the course except the achievement of passing marks on the tests; that he has made a genuine and serious effort; and that a repetition of the course would probably be of little value to him. The special mark is given only after conference with, and approval by, the principal. No general announcement of its use is made. It is discussed confidentially with the pupils concerned or with their parents, but not with others.

An "X" may be given in any subject in any grade. In a sequential subject the pupil receiving it is given credit for the course but may not repeat or continue that subject. In a nonsequential subject, credit is given and advanced work in the same field may be taken without any repetition of work. "X" credits are counted for high-school graduation but not for college entrance. Pupils having such credits may receive the same type of diploma as their classmates; the diploma bears no indication of the mark earned in any subject.

III. School Provisions: Curriculum and Instruction

This section of the bulletin is concerned with the instructional program for slow learners from two points of view: (1) the general scope and character of the curriculum for these pupils, and (2) instruction in specific curriculum areas.

General Scope and Character of the Curriculum for Slow Learners

The information presented under this heading includes several brief descriptions of curriculums in individual schools, followed by a summary of instructional practices as revealed by the questionnaire responses of school principals.

Curriculums in Individual Schools

School No. 1—In the Monroe High School of Rochester, New York, all first-year pupils (Grade VIII) are grouped according to three levels of learning ability—fast, average, and slow. While the rapid learners have an enriched program, the slow pupils are required to master only minimum essentials. Each pupil has one elective subject. Beginning with the ninth grade, several means of differentiation are used, with emphasis upon concrete and practical experiences for the slow learners. These pupils may take certain elective subjects, choose parallel courses in all basic subjects, or pursue an entirely different curriculum, depending upon the ability and probable future plans of each individual.

Of special significance is the vocational curriculum, operated under the Smith-Hughes law, for boys who need or desire an immediately practical program. Here the book work is reduced to a minimum and manual training or shop activity takes the place of much academic study. All work is entirely individual and is done on the contract plan. The shops provide training in auto mechanics, cabinetmaking, commercial art, drafting, electrical work, use of machine tools, printing, and sheet metal work. Since the United States entered the war, several of the courses have been modified to enable the boys to participate more immediately in the nation's war effort.

School No. 2—The four-year high school in Yonkers, New York, provides a social-civic curriculum for pupils who lack the ability or interest needed for success in the academic or college-preparatory curriculum. Pupils are guided into the social-civic curriculum at the beginning of Grade X. The basic program of studies is as follows:

Tenth year: (1) English, (2) social studies, (3) practical mathematics, (4) general science *or* business and social usage, and (5) physical education and health.

Eleventh year: (1) English, (2) consumer economics and city government survey, (3) social finance, (4) practical physics and chemistry, (5) physical education and health, and (6) elective.

Twelfth year: (1) English, (2) American history and problems of democracy, (3) senior science, (4) physical education and health, (5) elective, and (6) elective.

The work in English is planned primarily to develop eager and effective readers. It also stresses appreciation and discrimination in the use of newspapers, magazines, motion pictures, and the radio; everyday speech, including conversations, table talk, introductions, use of the telephone, and delivery of messages; the writing of business and friendly letters; and vocabulary building, sentence construction, and correct language usage.

In social studies the tenth year continues the work of the junior high school with such units as "The Family as a Social Unit," "The Problem of Public Health," "Our Industrial World," "Law and Justice in a Well-Ordered Society," "International Attempts for World Peace," and "Conflicts among Nations Today." The first half of Grade XI is devoted to consumer economics, and during the second half the pupils study at close range the work of each department of the local city government. The twelfth-year course in American history and problems of democracy emphasizes current problems in the light of past experience.

The course in practical mathematics for the tenth year is a review of earlier mathematics utilizing problems from the pupil's daily life. The "social finance" studied during the eleventh year is a continuation of the practical mathematics with applications to more complex problems such as home ownership, insurance values, savings and investments, automobile ownership, taxes, and government expenditures.

The science program stresses the importance

to society of scientific discoveries and inventions. In Grade X the subjectmatter deals with progress in agriculture, horticulture, sanitation, public health, and medicine. The practical physics and chemistry of Grade XI are concerned primarily with the materials and implements used in the home, including textiles, labor-saving devices, paints, plumbing, and sanitation, while the work in Grade XII continues along similar lines with emphasis upon recent developments in chemistry.

Business and social usage, which may be studied instead of general science during the tenth year, deals with the questions raised by pupils concerning their relations in the home, school, social life, and future business activities. During the second semester the course emphasizes business relations—getting a job, studying the job, putting one's best into the job, and preparing for advancement.

Electives available under this curriculum include introduction to business, speedwriting, typewriting, speech, drama, modern poetry, sociology, economics, mechanical drawing, music, and art. A social-civic pupil may also take as a regular elective any course in the academic curriculum as long as his effort indicates continued interest in it. Or he may study a special subject in the local vocational school.

School No. 3—The senior high school of Holyoke, Massachusetts, practices ability grouping and differentiation of content for slow learners in academic fields. It also provides several programs which stress vocational preparation. One of these is a "General Vocational Course" for girls who will probably quit school upon reaching the age of sixteen years. This is a two-year course leading to a certificate but no diploma. The core subjects are foods and clothing, and around these are built English, civics, related mathematics, related science, related art, child care, home nursing, and tearoom service. Girls in this group who wish to remain in school and complete the requirements for a diploma are placed in the "Applied Arts Curriculum," which gives them further training in foods, clothing, money management, applied science, quantity cookery, nutrition, and social and economic problems.

With financial help from the state and the federal government, the school has set up for both boys and girls a cooperative course called "Retail Foods Merchandising." The pupils in this course take a minimum of fifteen hours of school work each week and spend another fifteen hours working in retail grocery stores and meat shops. Their school training is definitely pointed toward the work they are doing outside. Graduates of the course receive a regular high-school diploma in the Retail Foods Merchandising Division.

In January 1942 the school shortened the day's work for a group of its senior boys and allowed them to attend a nearby trade school from one to six o'clock daily. These boys received their regular diplomas in June and were prepared to take jobs in airplane factories and other industrial concerns or to enter apprentice schools in the vicinity. In April a group of senior girls was organized to take similar training.

In the fall of 1942 the high school established a "Technical-Industrial Course" for boys, stressing general shop work, mechanical drawing, practical science, and practical mathematics. These pupils spend two or three periods a day in shop work, and the remainder of the time in allied subjects. The course has attracted many boys who formerly were enrolled in the so-called "General Course."

While much of the work just described is not provided exclusively, or even primarily, for pupils of the lower mental levels, most of it is very helpful in meeting the needs of such pupils.

Summary of Local Practices in Class Instruction

At this point it is desirable to consider the general characteristics of classroom instruction for slow learners in high schools without reference to any particular field of study. To obtain information on this matter, the questionnaire to high-school principals listed thirteen aspects of instruction and asked the respondents to indicate in which of these aspects the instruction for slow pupils in their schools ordinarily differs from that for average pupils, and in which direction the difference occurs. For example, the principals were asked whether the "amount of repetition or drill provided" is usually *greater* or *less* for slow learners than for average pupils. The results, expressed for each aspect of instruction as the percent of schools in which the more common difference in emphasis occurs, are presented in Table 6.

Table 6 shows that a majority of the reporting schools of each type are in accord with respect to eight of the thirteen modifications listed. Close together in frequency at the top of the list are "more individual supervision and guidance by the teacher" and "more repetition and drill provided." Somewhat smaller majorities of the schools reported that they give slow pupils smaller amounts of work during the term and less difficult lesson assignments; that they expect less reading and less abstract and critical thinking of such pupils; and that they provide more than the usual amount of manipulative and constructional activity. In addition, a small majority of the junior high schools indicated that with slow learners there is more use of visual aids and concrete materials.

As a rule, the modifications listed in Table 6 were reported most often by the junior high schools, next by the combined junior-senior schools, and least often by the senior high schools. On most items, however, the differences in frequency are relatively small. Data not shown in the table indicate a marked tendency for such modifications to be made more often by the larger senior high schools than by the smaller ones.

Instruction in Specific Curriculum Areas

The remaining pages of this section are devoted to descriptions of curriculum content and teaching procedures used by individual schools in English, social studies, science, mathematics, home economics, and vocational and prevocational activities. The information given for each school is limited to one or two of these fields.

English

Remedial reading, composition, and literature—In the slow-learning or "Z" sections at the junior-senior high school of South Milwaukee, Wisconsin, the work in English is planned primarily to increase skill in reading. At the beginning of the school year the *Iowa Silent Reading Test* is used to diagnose individual disabilities, and if the pupils are unusually poor readers, Gray's *Oral Reading Test* is given for further diagnosis. At the end of the year the pupils are retested to ascertain their progress.

TABLE 6.—WAYS IN WHICH THE CLASSROOM INSTRUCTION OR GUIDANCE PROVIDED FOR SLOW-LEARNING PUPILS IN THE COOPERATING HIGH SCHOOLS DIFFERS FROM THAT PROVIDED FOR AVERAGE PUPILS

Differences in classroom instruction or guidance	Percent of 292 junior high schools	Percent of 525 comprehensive senior high schools	Percent of 191 combined junior-senior high schools
1	2	3	4
A. *In a large majority of schools (75 percent or more) the classroom instruction or guidance for slow-learning pupils ordinarily differs from that for average pupils as follows:*			
1. More individual supervision and guidance by the teacher	83	75	82
2. More repetition or drill provided (a smaller majority of senior high schools)	82	74	81
B. *In a smaller majority of schools (between 50 and 75 percent) the classroom instruction or guidance for slow-learning pupils ordinarily differs as follows:*			
3. Smaller amount of work to be accomplished during the term (a larger majority of junior high schools)	77	65	72
4. Less difficulty or complexity of lesson assignments	73	62	67
5. Less reading expected	72	60	64
6. Less abstract and critical thinking expected	72	59	62
7. Shorter lesson assignments	71	57	66
8. More manipulative and constructional activity encouraged	63	52	57
C. *In a large minority of schools (between 25 and 50 percent) the classroom instruction or guidance for slow-learning pupils ordinarily differs as follows:*			
9. More use of visual aids and concrete illustrative materials in class (a small majority of junior high schools)	53	37	43
10. Less emphasis on the use of creative imagination	47	37	43
11. Less freedom in choosing and carrying on activities	32	31	29
12. Less provision for experience in group leadership	33	29	29
D. *In a smaller minority of schools (less than 25 percent) the classroom instruction or guidance for slow-learning pupils ordinarily differs as follows:*			
13. More opportunities to make firsthand observations in the community	19	20	19

The first method used to improve reading ability consists of exercises to overcome the specific deficiencies revealed by the reading tests. Two series of reading workbooks are used for this purpose—one in Grades VII, VIII, and IX, and the other in Grades X, XI, and XII. Charts kept by the pupils help to motivate their progress. The second method used is an extensive reading program. To make it easy for pupils to select suitable books, each teacher has his own class library composed of books having a high interest level and a low reading-difficulty level.

While the remedial reading program is carried on thruout the year, special emphasis is placed on related English composition during one semester and on literature during the next semester. The work in composition is highly practical. Grammar is presented only as it facilitates everyday speaking and writing, and much time is spent in direct study and practice of correct forms. The sentence is studied as a unit of clear expression without technical analysis of its structure except for the subject and predicate.

The semester of literature includes some intensive study of selections carefully chosen to suit the reading ability of slow learners. Many sets of books have been purchased to supplement the available anthologies and to provide substitutes for unsuitable selections in the literature texts. The course contains a wide variety of material—short stories, essays, biography, novels, plays, and poetry—but understanding is not sacrificed for literary value. In the eleventh grade, for example, the slow sections read *Mutiny on the Bounty* instead of *The House of Seven Gables* because the former seems to interest such pupils more and is far easier for them to comprehend.

A twelfth-year unit in letter writing—Earlier in this section the social-civic curriculum of the four-year high school at Yonkers, New York, was described in broad outline. In the first half of the final year of this curriculum, one of the most valuable units in English, according to the pupils themselves, is that on social letter writing. Before beginning the unit, the pupils usually agree in class discussion that a high-school graduate should be able to write neatly, in good taste, and without technical errors such letters as he will frequently need to write. A month or more is then devoted to the development of this skill.

Each pupil is required to write and address in class ten neat, correct, and well-worded letters or notes of various types. Letters are handed to the teacher as soon as they are written, and as many as possible are looked over during the class period. From one to five or six practice letters are usually required before a pupil succeeds in having letter No. 1 accepted. Each pupil keeps his "accepted" letters and then turns in all ten when he has completed the unit.

After the essential mechanics of letter writing have become automatic, more attention is given to naturalness, courtesy, and good taste in wording. Each day some of the best letters, as well as some of the worst, are read aloud by the teacher, and the pupils are led to see that an informal letter is merely a substitute for a friendly greeting or conversation. When this idea is grasped the writing becomes much easier. Pupils who at first wrote only one short letter during a class period are often able at the end of the unit to write three in the same length of time.

The following note received by a twelfth-year teacher from a graduate of the school who was then in the United States Army shows something of the appreciation which pupils have for their school experiences in letter writing:

> I guess you'll get a shock to know I'm now writing letters home for some of the fellows here, and helping others with theirs. Those 69 letters I wrote in twelfth-year English to get ten right (remember?) were certainly of use to me, and I want to thank you.

Social Studies

A junior high course—The two-year junior high school at Geneva, New York, has developed for its slow learners a special course in American history. This course, which extends thru Grades VII and VIII, correlates significant geography with the history but is limited to minimum essentials in both fields. The work is arranged in fifty-eight sections or "units," each built around one topic or phase of history. A maximum of eight class periods is allowed for the completion of each unit because, according to the instructor's experience, concentration upon one topic for this length of time just about exhausts the attention span of most pupils in the class. However, when a topic or phase of history cannot be treated

satisfactorily in a unit of this length, two units are made in order to cover the essential materials. Special projects are arranged for the faster workers and extra credit is given for their completion. The following is a summary of the basic course:

Units 1-4: Scientific explanation of the formation of the earth; facts about the earth; how it is divided and mapped; its climate and weather

Units 5-7: Rapid survey of ancient civilizations stressing their contributions; Western Europe and the period of exploration and discovery

Units 8-11: The red man's continent; colonization; intercolonial wars

Units 12-14: The American Revolution and the ensuing critical period

Units 15-22: Establishing the new nation; first struggles; political, social, industrial, cultural, and economic growth; political division on a social question

Units 23-25: Civil strife and reconstruction

Unit 26: How our great nation was settled from coast to coast

Units 27-33: Approach to understanding the geography of our nation

Units 34-40: Problems resulting from our growth —agricultural, industrial, political, social, economic, cultural, and scientific

Units 41-46: Growth of the nation's position and influence in world affairs; possessions; imperialism; world conflict; world peace; world depression

Units 47-54: Geography of the world with reference to economic and continental considerations; political importance of the world's leading nations

Units 55-57: National, state, and local governments

Unit 58: Some American ideals, traditions, and institutions.

The general plan for administering each unit of the course is as follows:

First class period—A general overview of the topic is given by the teacher, stressing the essential items. Pupils may be required to take a few notes or to copy material not easily obtainable from references. A worksheet is distributed containing five basic questions which all must understand and be able to discuss intelligently later. This sheet also includes projects for the more rapid workers.

Second and third periods—The overview is completed and the remaining time is devoted to reading in reference sources.

Fourth, fifth, and sixth periods—The pupils are given copies of a workbook containing blanks to be filled and additional questions to be answered. All workbooks must be handed in at the end of the sixth period for checking. Pupils who finish early may devote their spare time to the projects mentioned above. All available references, notes, and library facilities may be used in obtaining information for the workbooks. Each completed workbook makes a coherent story of the facts asked for in the worksheet.

Seventh period—The pupils answer questions orally, the questions being based on the five presented earlier in the worksheet. An oral recitation mark is given. The corrected workbooks are handed back near the close of this period to permit the pupils to review in preparation for the final test on the unit.

Eighth period—The teacher gives an objective test consisting of multiple choice, matching, completion, and listing questions as well as a paragraph to be written. Each pupil has a duplicated copy of the test before him.

All work in each unit can be completed in class. Home study is neither encouraged nor discouraged. Separate ratings on the class work, workbook, projects, test, and achievement in the unit as a whole are announced for each pupil on a posted score sheet. The results, as indicated by a comprehensive examination at the end of the two years' work, seem amply to justify continuance of the course.

A history unit correlating several subjects—In the six-year high school at Garfield Heights, Ohio, slow-learning classes carry on activity units to increase basic skills in reading, writing, arithmetic, and art, as well as to develop social concepts, understandings, and attitudes thru a variety of related subjectmatter. In a unit planned for an eighth-grade group in American history, one of the topics studied was "Westward Ho!" In history class the group traced the movement of the colonists beyond the Appalachian Mountains and across the continent to the Pacific. In science the pupils studied methods of transportation, defense, and sanitation used by these travelers, as well as the early occupations of mining, lumbering, trapping, and agriculture. The home economics class contributed information on types of food, houses, clothing, furniture, and amusements of the time. In music the songs and dances of the frontier were enjoyed, including "Oh! Susannah," "Arkansas Traveler," "Turkey in the Straw," and "Pop Goes the Weasel." Related songs of today, such as "Git Along Little Dogie" and "Home on the Range," were played on the phonograph and sung by the group. The mathematics class prepared charts showing the number of immigrants moving into areas at different times, changing centers of population, costs of transportation, and other pertinent facts.

Notebooks were used to preserve themes, outlines, reports, graphs, sketches, and pictures collected or prepared by the pupils. The art

teacher gave suggestions for making attractive drawings and other illustrations for these booklets. Models of pioneer life, such as whips, covered wagons, campfires, early forts, guns, log cabins, and clothing, were made and were exhibited in the display held at the end of the unit.

Science

Science for consumers—The high school at Faribault, Minnesota, has a one-year course in consumer science for slow pupils. This course attempts to give the pupils a sane attitude toward the science of their everyday lives and to provide them with a basis for evaluating many types of available goods and services. The necessary background in science is attained thru a study of physics and chemistry in greatly simplified form. The first fourteen weeks are devoted to physics, including machines, heat, and electricity because these topics are the most important for an understanding of consumer problems. The second fourteen weeks are spent in chemistry, beginning with a brief discussion of basic concepts and continuing with limited, practical applications of chemistry to consumer problems. The topics treated are the atmosphere, fuels, basic nonmetals, metals, and the new synthetics. In both physics and chemistry, demonstration by the teacher is generally substituted for individual laboratory work by the pupils.

Eventually each pupil makes a detailed study of the science connected with some problem in which he is especially interested. After finishing the work in chemistry, about a week is spent in discussing these individual problems and planning related projects. All work during the last eight weeks is developed around these problems. Basic assignments are given to the entire class, and the pupils primarily responsible for particular problems preside as "experts" while their own topics are being presented to, or discussed by, the group. These so-called experts may need to make demonstrations, conduct field trips, show samples they have collected, or give any pertinent information beyond that called for in the general class assignment.

An experimental project—The senior high school at Yonkers, New York, reports an unusually successful project carried on in its practical physics and chemistry class. A vacuum cleaner is brought from someone's home and shown to the class. In the ensuing discussion a question is raised as to whether cleaning and oiling the machine thoroly would make it work better, and the point is made that to decide this question one would have to make definite measurements. The pupils are invited to suggest ways of measuring the efficacy of the cleaner, but most of their ideas are too complicated to be carried out in the classroom. Finally, the teacher suggests that a pressure gauge put in place of the bag can be used to show how well the machine works.

In using this method the bag is removed and in its place is put a piece of board thru which a metal tube has been placed. The gauge, consisting of an ordinary water manometer, is attached by means of a rubber tubing to the metal tube which extends thru the piece of board. This done, a measurement is taken of the pressure exerted by the machine before being cleaned. The machine then is taken apart, cleaned, oiled, and put together again. The motor is examined to detect wear and any need for new parts, and in the process much is learned about the construction and operation of an electric motor. After this servicing the machine is tested again and usually a rather definite increase in the pressure is noted. The pupils readily interpret this result as meaning that the cleaner will pick up more dirt than before.

The experiment just described is supplemented by explanation until the children really understand how a vacuum cleaner works. The teacher stresses the fact that "vacuum" is a misnomer, and that the effectiveness of the cleaner is due to setting up differences in pressure which produce a flow of air. Related questions in the field of liquid pressure, as well as other methods of measuring pressure, are raised and discussed by the class with great interest.

Mathematics

Practical courses for eighth and ninth grades—In the junior-senior high school at Freeport, New York, the eighth-grade course in mathematics for slow learners is based on three principles: (1) the material must be within the ability of the group—concrete, expressed in simple language, and involving much repetition; (2) the material must increase the pupil's ability in the accurate use of fundamental

skills; and (3) it must acquaint the pupil with social situations in which mathematics is needed and help him to apply mathematical tools in these situations. Four units of work are covered, as follows:

1. Thoro review of the types of computations that people use in everyday life
   a. In earning money
   b. In spending money (cash accounts, instalment buying, budgets, etc.)
   c. Making money work (interest)
   d. Saving money (compound interest)
2. Computations and information needed by the citizen in his relations with the government
   a. The cost of government
   b. Supporting the government (taxes)
   c. Benefits derived from the government
3. Information needed by the citizen for his security and the protection of his property
   a. How to borrow money (mortgages and bank loans)
   b. How to guard against loss of property
   c. How to protect family in case of ill health or loss of life (insurance)
4. Computations and tools needed for simple measurement.

Experience in this school has shown that slow-learning boys who are to continue with industrial arts courses thru the senior high school need some practical work in mathematics beyond the eighth grade. Accordingly, a special course in this subject is now required of ninth-grade pupils who do not study algebra but who major in industrial arts. The topics included are closely related to shop problems, and time is allowed for necessary drill on phases of arithmetic which are used constantly in shop work. The course is outlined as follows:

1. Arithmetic fundamentals
   a. Drill on the four fundamental operations
   b. Drill on fractions to 1/64
   c. Drill on decimals to .001
   d. Changing fractions to decimals and vice versa
   e. Solving proportions
2. Use of instruments
   a. Reading a rule to 1/64 inch
   b. Reading a micrometer
3. Topics from geometry
   a. Measuring angles in degrees
   b. Measuring arcs in degrees
   c. Finding areas of plane figures
   d. Computing volumes
4. Rate of speed
   a. Speed of pulleys and belts
   b. Cutting-speed of machine with R.P.M.
5. Problems
   a. Figuring cost of various materials
   b. Finding strength of various materials.

Home Economics

Modified courses in junior high school—In the Keith Junior High School of Altoona, Pennsylvania, the work in home economics has been especially adjusted to meet the needs of low-IQ girls in the eighth and ninth grades. Instead of the two fifty-minute periods each week which are allotted to the other girls in the school, these slow learners have five such periods weekly. In Grade VIII the course emphasizes foods and includes such topics as food requirements of the body, proper selection of school luncheons, preparation of simple breakfast and luncheon dishes, diets for the sick, table service, and marketing. Meals are planned, prepared, and served to guests. Exhibits showing daily food requirements, standard sizes and contents of cans, and sick-room trays are prepared by the girls. Trips are made to local stores, markets, and dairies. Table service is studied intensively for the benefit of those who may become waitresses or household helpers. Food budgets for a two-week period are made by the girls for their respective families with the cooperation of their mothers.

The ninth-grade course focuses attention upon the girl herself. Personal grooming, selection of clothing, personality traits, social customs, home living, and sex hygiene are some of the topics included. There is study of correct posture and care of the teeth, hair, complexion, and hands, with demonstration and group practice of shampooing, manicuring, and other essential activities. Clothing is repaired and cleaned in the classroom. Color charts are made and used to ascertain each girl's becoming shades. Exhibits of shoes, hose, and underclothing are obtained from local stores. Several articles of clothing, such as dresses and blouses, are made in class. Correct introductions, table manners, shopping etiquette, and school manners are studied and practiced with care.

A child-care and home-apprenticeship project—Several years ago the junior high school at Glens Falls, New York, had in its slow eighth-grade group six girls with good personalities who were both dependable and interested in caring for children. There were also in the community a number of young mothers who needed help between the hours of four and seven each evening and were eager to employ trained, competent girls. The

instructor found six women with infants who were willing to take these eighth-graders into their homes from four to seven o'clock and teach them their routine, which consisted of (1) preparing the evening meal for the infant and family, (2) feeding the infant, (3) putting him to bed, (4) serving the evening meal, (5) washing dishes, (6) cleaning up the kitchen, and (7) reading to the older children. An apprenticeship of four weeks was agreed upon and, while no pay was stipulated, the girls usually were paid. Three of them stayed on with the women under whom they had served as apprentices, and the others were recommended for jobs in other homes.

Vocational and Prevocational Training

A varied program in the industrial field—Both an industrial arts program and a separate vocational course for boys are in operation at the junior-senior high school in Freeport, New York. The regular industrial arts courses are primarily prevocational and exploratory in character. For example, the course in metal shop for slow learners undertakes (1) to give the pupils practice in using the equipment and materials of the various metal workers, (2) to inform the pupils of occupational opportunities in the metal trades, especially in aircraft construction at present, (3) to develop manipulative skills necessary in basic industrial arts processes, (4) to acquaint the pupils with labor laws, apprenticeship programs, and other matters relating to the trades, (5) to develop an appreciation of skilful work and honest labor, (6) to provide an outlet for boys who have a desire to create mechanically, and (7) to contribute to the development of those who are not academically inclined or who are mentally handicapped. Both group and individual methods of instruction are used. Periods of group instruction usually do not exceed ten or fifteen minutes in length. The individual method is best used as a follow-up of the group instruction and is especially helpful to the dull or backward children. Individual teaching is done only as needed, however, because otherwise the pupil may come to depend too much on the instructor. Operation and instruction sheets are used to help the pupil refresh his memory. Manipulative materials are presented by means of actual demonstrations.

The vocational program, operating for fifteen hours each week, differs greatly in purpose and accomplishment from the regular industrial arts work. Most important at present are the special courses in premachine shop apprenticeship training and aircraft sheet metal work, which are designed specifically to prepare "in-school" boys to enter local defense plants immediately upon completion of the school term. This training provides enough repetition of tool operations to develop the basic skills required for holding a regular payroll job in industry. The pupils are carefully chosen for the program after examination of their mechanical ability. Altho the work is not planned primarily for slow learners, many boys who have had trouble in academic courses are found to have considerable manual skill and they fit into the program especially in the semihand skills, such as aircraft riveting, bench filing, and subassembly operations.

A "work service" program—The Handy Junior High School of Bay City, Michigan, has a program of work service to help mentally slow pupils develop good habits and attitudes with respect to manual work. Each pupil chooses the kind of service he prefers from among those available, and agrees to work at it for one period each day. The pupils are not forced to do this, but none have refused to select a job. The jobs available for boys include care of the school lawn and shrubs, and such custodial work as dusting, sweeping, painting, and repairing. For girls there are cafeteria service, dusting, custodial work in the school library, and rest room supervision. No one may begin a job until he understands it thoroly. Each pupil is issued a worksheet upon which is recorded his name and his job. His performance is marked daily by the instructor in charge, and the reason for the mark is explained. Marks are based upon attitude, thoroness, and industry. A careful check is made several times during each work period to discourage any tendency to loaf.

IV. Concluding Statement

From the information presented earlier in this bulletin, together with the facts and suggestions available in other pertinent literature, a number of conclusions may be drawn concerning desirable practices in the secondary education of slow learners. The more important of these conclusions are summarized here.

1. *Effects of excessive failure and retardation in school*—While a limited amount of failure may be valuable to every child, extensive and persistent failure is decidedly detrimental. When a pupil fails frequently in school because the work is unsuited to his abilities, he is likely to become discouraged, lose interest in ordinary school activities, and devote his energies to annoying the teachers and other pupils. In such cases nonpromotion or the forced repetition of subjects usually does the pupil more harm than good. His feelings of inferiority and resentment at being grouped with younger children tend to offset the advantage of working on a lower level of difficulty. Moreover, the repetition of an entire semester or year of work is depressing and seldom results in satisfactory achievement.

2. *Need for a modified school program*—The school programs of slow learners should differ in important respects from those of average pupils. Mentally dull and retarded children are undoubtedly handicapped in trying to deal with the typical academic curriculum. Even where such a curriculum has been modified for average pupils, there should be further adjustments to suit the abilities and interests of slow learners. The more extensive and severe a child's mental incapacity, the greater is his need for a program that is different from the average.

3. *The curriculum for slow learners*—The curriculum for mentally dull and retarded pupils should develop appropriate understandings, skills, habits, and attitudes in all major areas of living—self-realization, human relationships, civic responsibility, and economic efficiency. The facts do not warrant a wholly "manual" school program for these children. Yet, while some academic work should be provided, more emphasis may well be given to motor activities than in the case of mentally normal pupils, especially to prevocational and vocational training of a manipulative type during the last year or two of school attendance. Some of this training should take the form of outside work experience under cooperative arrangements between the school and private employers.

The courses in language and mathematics should be limited to those aspects for which a need exists or may reasonably be anticipated for mentally handicapped individuals. The science program should stress the application of facts and principles to the maintenance of health and to the efficient production and wise consumption of goods. In social studies a desirable minimum of factual content may be prescribed to advantage, but more time and effort should be spent in developing the habits, skills, and attitudes which are fundamental in democratic living. Some of these will be matters on which brighter children may need to spend relatively little time in school, but which the slow pupil is not likely to learn without special study and practice. Physical development and athletic skills should receive somewhat more than the usual attention, while opportunity should be provided for simple activities in many areas of individual interest and group welfare.

4. *Characteristics of instruction*—Pupils of low mentality generally need more than the average amount of individual supervision and guidance, because they are less able to plan and to criticize their own work. Lesson assignments should be relatively brief and simple, altho substantial enough to evoke a high degree of effort. The pupils should have practice in drawing conclusions and in applying general principles, but reasoning cannot be relied on as a method of learning to the same extent as with average children. There must be more than the usual amount of definite instruction and drill on appropriate habits and skills in specific situations.

Similarly, while every reasonable effort should be made to improve the slow pupil's reading abilities, he cannot usually be expected to read as much or as well as the average child of his age. Hence, it is important to increase the use of visual aids and concrete materials, and to introduce more manipulative and constructional activity of a significant type in connection with academic studies. Under careful guidance, slow children should have as much freedom in choosing and carrying on individ-

ual activities or projects as they can use without harm to themselves or other pupils. In group work there should be frequent changes in approach or in the type of activity carried on.

5. *Separate classes*—When wisely and skilfully administered, separate classes seem to give mentally backward and retarded pupils better opportunities for intellectual learning than do heterogeneous classes. As the high schools undertake to care for more and more youngsters of limited capacity, they will probably find it increasingly advantageous to segregate these pupils whenever possible for academic or intellectual work, while for other activities the individual's interests or his physical and social needs may well be the chief considerations in grouping. An acceptable plan will not only facilitate the acquisition of essential academic knowledge and skills, but it will also provide opportunities for learning to associate pleasurably and to cooperate effectively with individuals of average and superior intelligence.

Under an able school staff that is eager to understand and help the backward pupil, placement in a slow-moving class for a part of his work is not likely to hurt the morale of such a pupil as much as would repeated failure to "hold his own" with average and superior children in a heterogeneous group. It is essential, of course, that the pupil have a program suited to his abilities and interests. He must experience the satisfaction of success according to standards that are reasonable for *him*. No plan of ability grouping can be beneficial unless the content and methods of teaching are differentiated to meet the needs of each group and of each individual within the group.

6. *Bases for placement and guidance*—Whether or not slow learners are placed in separate classes, their instruction and guidance should be based on a variety of pertinent information. Each pupil's abilities should be appraised in the light of intelligence test scores, results of special aptitude and achievement tests, school marks, and the judgments of teachers and counselors. In addition, the child's physical and mental health, temperamental and emotional traits, social maturity, general behavior, and family and neighborhood environment should receive careful consideration. School authorities should avoid grouping educationally backward pupils together without reference to the cause or causes of their backwardness. In most instances, for example, it would be unwise to subject mentally retarded children of acceptable habits to the unwholesome influence of more intelligent pupils who are seriously maladjusted emotionally, morally, and educationally.

7. *Qualifications of teachers*—Teaching pupils of low mentality requires the same qualities and abilities that are needed in teaching normal children, but it requires some of these characteristics in a higher degree. Of the qualities needed especially by teachers of slow pupils, the most important probably are patience and a sympathetic understanding of the problems of individual pupils. Also valuable, altho not absolutely essential, is special college training for work with dull and retarded children. Somewhat less significant, perhaps, are greater general skill in teaching a given subject, longer teaching experience, a broader cultural background, and higher general intelligence than are needed in teaching average children. On first thought a broad cultural background and superior mentality may seem of no special advantage to a teacher of the dull and retarded. Yet such a teacher often finds his knowledge and ingenuity taxed to the limit in trying to devise materials and methods which will keep his pupils interested and eager to learn.

8. *Need for better school practice*—As with the education of superior pupils, high-school practice in training slow learners tends to lag far behind the trend of competent opinion in this field. While some schools are doing first-rate work with the mentally backward and retarded, many other schools need to develop programs which will attract and hold these pupils until they are adequately prepared for all-round living and can obtain suitable jobs. With the prospect of a widespread lack of private employment for older youth after the war, public agencies must provide special education or remunerative work, or both, for many thousands of young people whose abilities and interests are unsuited to the typical academic curriculums of senior high schools and colleges. The major responsibility for educating these individuals must be successfully assumed by local or state-controlled schools if the danger of a separate federal system of schools for youth is to be avoided.

V. Selected References

Altho limited in the main to books and monographs, this list covers a wide variety of pertinent topics. Among the references devoted especially to school organization and teaching methods for slow learners are several which deal chiefly with such children at the elementary-school level but which contain material of value for secondary schools as well.

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Acknowledgment

In addition to expressing appreciation generally to high-school principals who answered the questionnaire, the Research Division gratefully acknowledges the special assistance of the principals and faculty members whose names appear below. These persons submitted descriptions of provisions for slow learners in their schools or personal comments on questions of policy in the education of such pupils. Their names are listed here after the names of their respective schools, which are arranged alphabetically: Abraham Lincoln High School, Los Angeles, Calif.: Ethel Percy Andrus, Winifred Hunt; Albert Leonard Junior High School, New Rochelle, N. Y.: Henry J. Graybill; Amherst High School, Amherst, Mass.: Ralph W. Haskins; Ann J. Kellogg Junior High School, Battle Creek, Mich.: Doris D. Klaussen, Georgia York; Atlantic City Junior High School, Atlantic City, N. J.: Glen C. Heller; Augusta High School, Augusta, Kans.: H. H. Robinson; Battle Creek Senior High School, Battle Creek, Mich.: Earl J. Welsh, Dorothy Van Deusen; Bay Ridge High School, Brooklyn, N. Y.: Elizabeth T. Fitzpatrick, Anna D. Keeley; Benjamin Franklin High School, Los Angeles, Calif.: Robert J. Teall, Frances P. Bartlett; Carteret High School, Carteret, N. J.: Anna D. Scott, John Czerniewicz, K. Donovan, Mrs. George L. Kobrin, E. C. Monahan; Central Junior-Senior High School, South Bend, Ind.: P. D. Pointer; Cole Junior High School, Denver, Colo.: C. B. Pendleton, Catherine Huxtable, Harvey M. Meyer, Grace M. Morgan, Carl Prior; D. S. Keith Junior High School, Altoona, Pa.: C. E. Whipple, Margaret Hall; East High School, Green Bay, Wis.: S. M. Current; East Junior High School, Waterloo, Iowa: H. D. Taylor, Adie Lee Gregory; El Paso High School, El Paso, Texas: R. R. Jones, Lila McNutt, D. Willis; Euclid Central High School, Euclid, Ohio: W. G. Fordyce; Faribault High School, Faribault, Minn.: H. L. Bettendorf, Robert Bryan, L. M. Ellingson, Agnes McCarthy; Fort Hill High School, Cumberland, Md.: Victor D. Heisey; Freeport Junior-Senior High School, Freeport, N. Y.: Martin M. Mansperger, Ella M. Davies, Clarence Genner, Gladys R. MacArthur, William Parker, Mabel C. White; Garfield Heights High School, Garfield Heights, Ohio: Mary H. Kerr; Geneva Junior High School, Geneva, N. Y.: C. L. Bowler, H. H. Northrop; Glens Falls Junior High School, Glens Falls, N. Y.: Walter P. Reichert; Grant Junior High School, Denver, Colo.: Clark H. Stone, Winifred Gordon, Pauline Winkler; Hammond High School, Hammond, Ind.: A. L. Spohn; Hamtramck High School, Hamtramck, Mich.: E. M. Conklin; Highland Junior High School, Holyoke, Mass.: Edwin J. Keough; Hoke Smith Junior High School, Atlanta, Ga.: Roy W. Davis, Emilie B. Rogers; Hollenbeck Junior High School, Los Angeles, Calif.: J. C. Reinhard, Lillie H. Saul; Holyoke High School, Holyoke, Mass.: Henry J. Fitzpatrick; Hutchinson High School, Hutchinson, Kans.: J. F. Gilliland; Le Roy High School, Le Roy, N. Y.: Edward W. Spry; Lincoln Junior High School, Coldwater, Mich.: V. O. Bates; Longfellow Junior High School, Richmond, Calif.: H. L. Hunn, Miss Barbieri, Miss Borland, Miss Head, Mrs. Pennington, Mrs. Ross, Mr. Still; Monroe High School, Rochester, N. Y.: William E. Hawley, Lenoir H. Burnside; Mound Junior High School, Columbus, Ohio: L. N. Drake, Mary Schleicher; Mt. Lebanon Senior High School, Mt. Lebanon, Pittsburgh, Pa.: Ralph D. Horsman; Nashua Junior High School, Nashua, N. H.: Murray J. Wright, Martha Shaber; Nathan Hale Junior High School, Cleveland, Ohio: A. T. Carr; Nathan Hale Junior High School, New Britain, Conn.: Harry Wessels; Newton High School, New York, N. Y.: Charlotte Eggleston, Miss Eaton, Mr. Smith; Northern High School, Detroit, Mich.: J. E. Tanis, A. L. McGrath; Northwest Junior High School, Reading, Pa.: Landis R. Klinger; Nott Terrace High School, Schenectady, N. Y.: E. O. Hoffman, Mary E. Kerley; Ocean City High School, Ocean City, N. J.: George W. Meyer; Palmer High School, Palmerton, Pa.: Donald W. Denniston, Robert B. Hunter; Pueblo High School, District No. 20, Pueblo, Colo.: Lemuel Pitts; Richmond Senior High School, Richmond, Ind.: E. C. Cline; Rutherford High School, Rutherford, N. J.: W. H. Moore; Shorewood High School, Shorewood, Wis.: Grant Rahn; South Milwaukee Junior-Senior High School, South Milwaukee, Wis.: R. G. Hein, M. A. Hintz, Berenice Kushner; Stadium High School, Tacoma, Wash.: Howard M. Carr; Sullivan Junior High School, Sullivan, Ind.: H. W. Branstetter; T. L. Handy Junior High School, Bay City, Mich.: A. H. Cansfield; Theodore Roosevelt Junior High School, Syracuse, N. Y.: Charles S. Gibson; Thomas Jefferson High School, Brooklyn, N. Y.: Ludwig Kaphan, Samuel Siegel; Tilden Junior High School, Philadelphia, Pa.: Frank C. Lokes; Tuscaloosa Junior High School, Tuscaloosa, Ala.: H. D. Harrison; Walker Junior High School, Milwaukee, Wis.: W. C. Koepke; Walton High School, New York, N. Y.: Marion C. Cahill; Westport High School, Kansas City, Mo.: D. H. Holloway; Whittier Union High School, Whittier, Calif.: Marian L. Wilson, Bertha Wolin; William P. Bancroft Junior High School, Wilmington, Del.: Thomas W. Mulrooney; Yonkers High School, Yonkers, N. Y.: Frank L. Baker.

A COMPELLING reason for giving serious consideration to the organization of a new program of instruction is that scientific studies have revealed the importance of adapting instruction to various types and grades of individual ability. Teachers and principals of secondary schools have become keenly aware of the fact that some pupils are slow in learning what other pupils learn rapidly. Slow learning is not always due to lack of intelligence. It may be, and often is, due to such causes as lack of interest in a particular subject or lack of proper motivation for study. If devices can be found for appealing to pupils in such a way as to stimulate them to maximum endeavor, they very frequently show capacity for learning that was covered up by lack of interest or lack of proper motivation. Even where a pupil is of low ability it is to be remembered that his attendance at secondary school is due to causes which are not of his making, and proper provision for him is a right which he is justified in claiming from society.—*What the High Schools Ought To Teach*, Special Committee Report to the American Youth Commission, 1940.

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